LXXXVIII. *Obſervatio Eclipſis Lunaris facta* Matriti *a P^a.* Joanne Wendlingen, *Societatis* Jeſu, *in Regali Obſervatorio Collegii Imperialis ejuſdem Societatis, Die* 30 Julii 1757.

Quælibet obſervatio bis inſtituta fuit, ſemel interjecto oculum inter lentemque ocularem vitri clari, cærulei, plani, ac bene terſi, fragmento. Hæ obſervationes notantur hac voce cerul. *Teleſcopium, quo uſus ſum, eſt* Gregorianum *trium pedum* Anglicanorum, *omnino præclarum.*

Communicated by Matthew Maty, *M. D. F. R. S.*

[Read April 20, 1758.]

IMMERSIONES.		Tempus verum h	′	″	Differentia ″
Principium eclipſis, *clar.* -		9	47	34	
Mare Humorum, *clar.* -		—	52	47	
Grimaldus - - - - -	*cær.*	—	54	28	— 59
	clar.	—	55	27	
Bullialdus - - - - -	*cær.*	10	1	21	— 13
	——	10	1	34	
Keplerus - - - - -	——	—	9	35	— 10
	——	—	9	45	
Copernicus - - -	——	—	16	15	— 12
	——	—	16	28	
Heraclides - - - -	——	—	18	14	— 10
	——	—	18	24	

Manilius

IMMERSIONES.		Tempus verum h	′	″	Differentia ″
Manilius	*clar.*	10	30	43	— 11
	cær.	10	30	54	
Menelaus	—	—	34	11	— 9
	—	—	34	20	
Promontorium	—	—	44	49	— 9
	—	—	44	58	
Mare Criſium	—	—	45	33	— 11
	—	—	45	44	
Proclus, *clar.*		—	46	54	
Plato	—	—	54	48	— 14
	—	—	55	2	
Langrenus	—	11	7	3	— 20
	—	11	7	23	

EMERSIONES.		Tempus verum h	′	″	Differentia ″
Plato	*clar.*	11	40	34	— 14
	cær.	11	40	48	
Heraclides	—	—	41	27	— 12
	—	—	41	39	
Grimaldus	—	—	47	57	— 7
	—	—	48	4	
Keplerus	—	—	52	58	— 10
	—	—	53	8	
Copernicus	—	12	1	36	— 12
	—	12	1	48	
Menelaus	—	—	17	18	— 10
	—	—	17	28	
Finis eclipſeos, *clar.*		—	52	15	

Obſervatio Eclipſis Lunaris, facta ab eodem, eodem modo, eodem loco, iiſdemque inſtrumentis Die 24 Januar. *Anni* 1758.

Ab hora 5^ta^ *uſque ad finem obſervationis tantum commovebatur impregnata plurimum vaporibus athmoſphæra, ut tota lunæ illuminatæ portio præter morem undulare videretur. Flabat boreas, indicante thermometro Reaumuriano.* 1. *grandem infra aquæ congelationem.*

IMMERSIONES.		Tempus verum h	′	″	Differentia ″
Principium		4	7	42	
Grimaldus	*cær.*	—	9	55	— 38
	clar.	—	10	33	
Ariſtarchus	—	—	15	37	— 34
	—	—	16	11	
Mare Humorum	—	—	20	48	— 24
	—	—	21	12	
Copernicus	—	—	26	45	— 13
	—	—	26	58	
Plato	—	—	35	41	— 41
	—	—	36	22	
Tycho	—	—	39	31	— 38
	—	—	40	9	
Menelaus	—	—	45	43	— 39
	—	—	46	22	
Plinius	—	—	50	17	— 27
	—	—	50	44	
Promontorium Somni	—	—	58	15	— 27
	—	—	58	42	
Cleomedes	—	5	0	22	— 14
	—	5	0	36	

IMMERSIONES.		Tempus verum h	′	″	Differentia ″
Proclus - - - - -	*cær.*	5	2	9	— 6
	clar.	5	2	15	
Princip. Maris Crifii -	—	—	3	6	— 25
	—	—	3	31	
Langrenus - - -	—	—	7	40	— 14
	—	—	7	54	
Immerſ. tot. Maris Crifii	—	—	8	19	— 11
	—	—	8	30	
Immerſio totalis Lunæ	—	—	12	50	— 40
	—	—	13	30	

In fine cœlum ſerenum, & athmoſphæra quieta.

REFLEXIO.

Notabilis appulſus umbræ terreſtris ad faculas maculaſque lunares differentia, dum partim vitro colore cæruleo tincto, partim abſque eo, obſervationes inſtituuntur, inventa a D°. de Barros, & tum in obſervatorio Pariſino tum alibi ſæpius confirmata, ad me duplicem hanc lunæ eclipſim, ea qua vel licuit circumſpectione, inſtituendam determinavit, ſpe fretus; me phænomeni hujus cauſas, ſi non veras, veritati ſaltem proximas, inventurum; unde in tempore de vitris planis bene terſis, diametri mediæ lineæ, partim colore cæruleo claro, partim flavo tinctis mihi provideram, his tamen ultimis uti non licuit ob nimiam umbræ penumbræque confuſionem.

Interjecto oculum inter, lentemque ocularem vitri cærulei fragmento, ſequentia obſervavi. 1. Umbra terreſtris in immerſione citius maculam aut faculam lunarem attigit, & in emerſione tardius deſeruit,

quam dum abſque eo obſervationem inſtitui. 2. Claritas lunæ, alioquin offendens oculum, ſuavior apparebat. 3. Limites umbræ perfecte terminabantur excepta ſecunda eclipſi, in qua (flante borea) ab hora quinta illuminata lunæ pars undulare videbatur.

Suppoſitis his phænomenis, uti et athmoſphæra lunari, de qua vix dubio locus, ſequentia intuli: 1. Quo denſior dicta athmoſphæra fuerit, major radiorum portio ab hac in immerſam umbræ terreſtri lunæ portionem, limitibus ſaltem proximam, reflectetur, eoſque reddet dubios, quod quidem contingit, dum abſque adminiculo per nudum teleſcopium obſervatio inſtituitur, ſecus vero dum oculum inter, lentemque ocularem, vitrum cæruleo colore tinctum interjicitur. Addito ſecundo, ac tertio phænomeno, nempe per vitrum cæruleum lumen multum apparere ſuavius, infertur, ſi color cæruleus ſufficit ad mitigandam tantopere eam lunæ illuminatæ portionem, quæ extra omnem umbram conſpicitur, quanto magis ſufficit, ad tollendam omnem claritatem, quæ ab athmoſphæra lunari in hoc corpus reflectitur? & ecce tibi ſecundam illationem, nempe limites umbræ facilius determinari. 3. Diametrum umbræ majorem videri debere, & vel ideo immerſiones macularum aut facularum lunarium citius, emerſiones vero tardius ſuccedere debere; quæ quidem omnia cum obſervationibus congruunt.

Dixi in prima illatione, reflecti aliquam luminis portionem a lunæ athmoſphæra in ipſam eclipſatam corporis hujus portionem, non ſecus, ac in globo hoc terraqeuo accidit, qui poſt ſolis occaſum aliquo adhuc tempore illuminatur. Hæc lucis reflexio tanto erit major, quanto athmoſphæra fuerit denſior, &

quia

quia ſupponere licat, hanc in luna non ſemper eſſe æqualem, infertur, differentiam temporis appulſus umbræ non in omni eclipſi lunari poſſe eſſe æqualem, quod demum convenire videtur duplici meæ obſervationi, ut ex adnotatis temporum differentiis liquet. Hæc mea eſt circa propoſitum phænomenon opinandi ratio.

LXXXIX. *Obſervations upon a ſlight Earthquake, tho' very particular, which may lead to the Knowlege of the Cauſe of great and violent ones, that ravage whole Countries, and overturn Cities.* By John Andrew Peyſſonel, *M D. F. R. S. Tranſlated from the* French.

Read April. 20 1758.

I Went to make my obſervations upon the natural hiſtory of the ſea; and when I arrived at a place called the Cauldrons of Lance Caraibe, near Lancebertrand, a part of the iſland of Grande Terre Guadaloupe, in which place the coaſt runs north-eaſt and ſouth-weſt, the ſea being much agitated that day flowed from the north-weſt. There the coaſt is furniſhed with hollow rocks, and vaults underneath, with chinks and crevices: and the ſea, puſhed into theſe deep caverns by the force and agitation of the waves, compreſſes the air, which, recovering its ſpring, forces the water back in the form of the moſt magnificent fountains;